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| 09/982,227      | 10/17/2001  | Dmitri E. Nikonov    | 42390.P10601        | 7399             |

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EXAMINER

WONG, ERIC K

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 08/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/982,227

Applicant(s)

NIKONOV ET AL.

Examiner

Eric Wong

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☒ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. Examiner notes applicant's statement of submission of a Request for Approval of Drawing Change filed with the response, but such a request was not present.

### *Claim Rejections - 35 USC § 102*

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 7-30 are rejected under 35 U.S.C. 102(e) as being anticipated by United States Patent Number 6,549,688 to Bazylenko.

As to claims 7, 11, 14, 19, 22, 23, 25, 28, 29 Bazylenko discloses in figure 13, a semiconductor optical device comprising:

An integrated optical circuit having:

A set of optical amplifiers formed in the integrated optical circuit and coupled to the input waveguide elements (660); and

An arrayed waveguide grating (AWG) formed in the integrated optical circuit and coupled to the set of optical amplifiers (570).

Art Unit: 2874

As to claims 8, 9, 12, the AWG is coupled to a set of optical amplifiers via a set of input/output waveguide elements (180, 200, Figure 2)

As to claim 10, it would be inherent that an optical amplifier connected to waveguide elements would have a gain portion (column 13, line 66)

As to claim 13, 16, 17, 18, 20, and 24, the set of optical amplifiers are coupled to combine pump light and optical signal light (590, Figure 13)

As to claims 26, 27, and 30, the optical amplifier comprises rare-earth doped fibers such as Erbium (Column 3, lines 53-63)

As to claim 15, each amplifier is made of varying lengths to compensate for the AWG (Column 13, Lines 3-15).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bazylenko as applied to claims above.

As to claims 1 and 2, Bazylenko discloses an integrated optical circuit with a set of amplifiers and AWGs, but fails to explicitly disclose a set of transceivers to couple a set of optical channels into an optical fiber that is input to the integrated circuit.

The use of transceivers is widely known in the art for transmitting, receiving or processing signals and that an optical fiber would be required to send such a signal to a device.

Art Unit: 2874

It would be obvious to one skilled in the art at the time the invention was made that a set of transceivers coupled to an optical fiber would be required to process and transmit signals in the optical communications system of Bazylenko.

As to claim 3, rejection is based on same reasons given above for claim 13.

As to claim 4, rejection is based on same reasons given above for claim 10.

As to claim 5, a set of optical signals are demultiplexed and multiplexed in the integrated circuit (Abstract).

5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bazylenko as applied to claim 19 above and in further view of United States Patent Number 6,137,939 to Henry et al.

Bazylenko discloses an integrated optical waveguide device with an arrayed waveguide grating formed in the integrated circuit, but fails to explicitly disclose a varying shape and width of the waveguide

Henry discloses an arrayed waveguide grating which has widths that vary in order to provide the most optimum performance in an arrayed waveguide grating (Column 3, line 36).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to vary the width of the waveguide to achieve optimum performance of a planar optical waveguide.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Wong whose telephone number is 703-305-4741. The examiner can normally be reached on Monday through Friday, 830AM - 430PM.

Art Unit: 2874

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 703-308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7724 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

EW  
August 11, 2003

  
Brian Healy  
Primary Examiner